Exercise 1 *Your friend buys a new car, and as soon as they drive it off the lot, it begins to depreciate in value. After 2 years, the car is worth* $\$16,000$ *and after 4 years, the car is worth* $\$12,000$*. Assume that the car's value drops linearly.*

(a) *A linear function V that expresses the value of the car in terms of the number of years x since it was purchased is* $V(x) = \boxed{-2000x + 20000}$.

(b) *The y-intercept of the function V is* ($\boxed{0}$, $\boxed{20000}$).

(c) *The y value of the y-intercept represents*

Multiple Choice:

(i) *the starting value of the car.* ✓

(ii) *the time at which the car's value is 0.*

(iii) *the average value of the car over its lifespan.*

(d) *The x-intercept of the function V is* ($\boxed{40}$, $\boxed{0}$).

(e) *The x value of the x-intercept represents*

Multiple Choice:

(i) *the starting value of the car.*

(ii) *the time at which the car's value is 0.* ✓

(iii) *the average value of the car over its lifespan.*